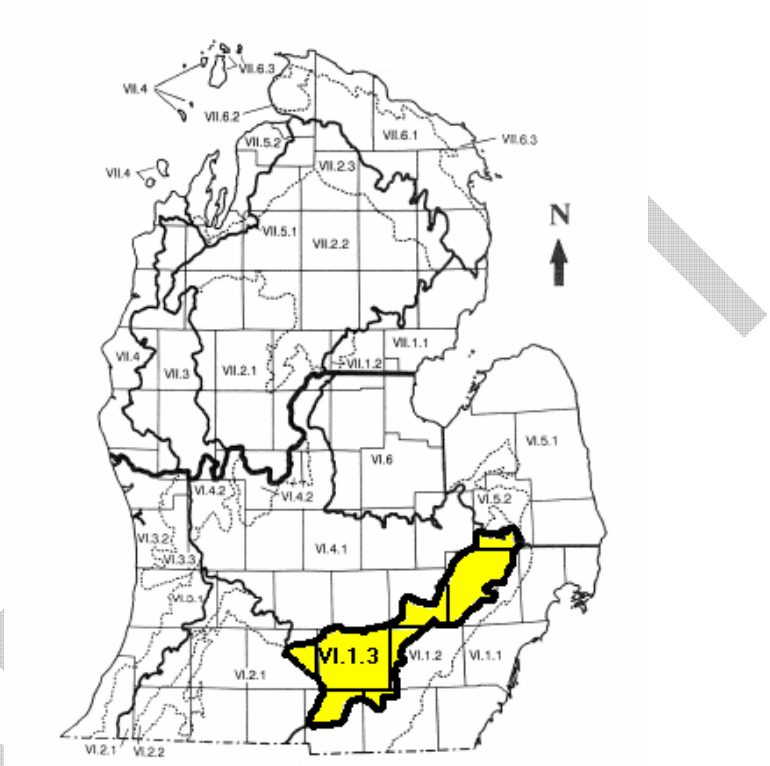
Natural Resources of Section VI.1.3

Information contained in the "Natural Resources of Section VI.1.3" component comes from:

Regional Landscape of Michigan and Wisconsin, A Working Map and Classification. Dennis Albert. September 20, 1995.



Map excerpted from Michigan Natural Features Inventory (MNFI) Report, page 22

Waterloo Recreation Area is located in section 6, subsection 1.3, known as the Jackson Interlobate; coarse textured end moraine, outwash, and ice contact topography; oak savannah and oak-hickory forest, hardwood swamps, prairie fens, and bogs.

WATER RESOURCES

Many kettle lakes and ponds can be found on the outwash, end moraines, and ice contact areas. Extensive wetlands surround many of the lakes and occupy entire ice-block depressions. Both marl and peat deposits were extensively mined in the past. The headwaters of many major rivers originate in the extensive wetlands. These are the Huron, Grand, Kalamazoo, and St. Joseph Rivers.

CLIMATE

Growing season is 140 to 150 days. Danger of late spring frosts is great due to numerous lowland depressions, including outwash and kettle lakes. Average snowfall is 40 to 50 inches. Annual precipitation is 30 to 32 inches. Extreme minimum temperatures range from -22° F to -28° F.

GEOLOGY AND TOPOGRAPHY

The underlying Mississippian and Pennsylvanian bedrock, primarily sandstone, is locally exposed at the surface in the southwestern end of the subsection. Drift thickness is generally less than 100 feet. In the northeastern part bedrock is overlain by 250 to 300 feet of glacial drift.

There are broad expanses of outwash sands that surround sandy and gravelly end moraines and ground moraines. End and ground moraines remain as island-like hills surrounded by flat outwash. Larger linear segments of end moraine, broken by only narrow outwash channels are typically located along the margins of the subsection.

The Jackson Interlobate region includes areas of ice contact topography. Kettle lakes, kames, eskers, and segments of outwash channels are predominant features of the ice contact areas. At the west edge the topography is more gentle; broad coarse textured ridges are surrounded by deposits of outwash land.

SOILS

Soils found in the moraine areas of the park are either well drained or excessively drained. In the outwash regions drainage ranges from excessively well drained to poorly drained. Ice contact areas are excessively well drained on upland kames and eskers, and are poorly drained in the kettles and outwash channels. Sandy loam is the most prevalent soil type in the moraine ridges, while sand is most prevalent on the outwash plains. The glacial drift that forms the moraine ridges is made up of local limestone bedrock. Illuviation is responsible for the clay rich horizon in many of the soils on the moraines, providing a good water holding capacity. Ice contact areas contain sand and gravel.

Natural Resources of Waterloo Recreation Area

JACKSON COUNTY CLIMATE		
MONTH	**AVG. MIN TEMP**	**AVG. MAX TEMP.**
January	15F./-9C..	29F./-2C.
July	61F.'16C.	83F./28C.
PRECIPITATION	**RAINFALL**	**SNOWFALL**
Average Annual	29in./74cm.	39in./99cm.
GROWING SEASON	**DAYS ABOVE 90F/32C**	**DAYS BELOW**
152	13	10
		Source: NOAA Climate Summary, 1995

WASHTENAW COUNTY CLIMATE		
MONTH	**AVG. MIN TEMP**	**AVG. MAX TEMP.**
January	17F/-8C	31F/-1C
July	52F/17C	84F/29C
PRECIPITATION	**RAINFALL**	**SNOWFALL**
Average Annual	30in./76cm	36in./91cm.
GROWING SEASON	**DAYS ABOVE 90F/32C**	**DAYS BELOW 0F/-18C**
174	11	6
		Source: NOAA Climate Summary, 1995

Due to the Waterloo RA's southern location in the Jackson Interlobate Region, the climate data for the Jackson/Washtenaw County will vary slightly from the averages recorded for region VI.1.3.

WATER RESOURCES

Lakes and ponds are scattered throughout the entire park, ranging in size from a few acres to over 500 acres. Many of these lakes are spring fed. The depth of these lakes is as varied as their size, with depths anywhere from two feet to forty feet. The irregular depth and shape of the lakes is largely due to the irregular topography left from prehistoric glaciers. Because of the glacial originations of most of these lakes, their bottoms are formed mainly of sand, gravel, marl, or muck. Shores are marshy in places with zones of pond lily, arrowhead, cat-tails, reeds, marsh grasses, and shrubs such as dogwood, elderberry, buttonbush, and willows. Occasionally tamarack is found in the flat swamps which represent former lake beds. Water is satisfactory for bathing, but not for drinking, according to the State Health Department.

Lakes found within Waterloo RA:

Big Portage Lake: 531 acres, 40' deep
Cassidy Lake – 46 acres, 12' deep
Cavanaugh Lake – 217 acres, 20' deep
Cedar Lake – 76 acres, 27' deep
Clear Lake – 137 acres, 34' deep
Crooked Lake – 113 acres, 20' deep
Doyle Lake – 18 acres, 14' deep
Green Lake – 150 acres, 13' deep
Hankard Lake – 7 acres, 8' deep
Little Portage Lake – 174 acres, 21' deep
Long Lake – 150 acres, 30' deep
Merkle Lake – 94 acres, 12' deep
Mill Lake – 163 acres, 24' deep
Mud lake – 92 acres, 7' deep
Sugarloaf Lake – 205 acres, 20' deep
Walsh Lake – 15 acres, 21' deep
Welch Lake – 106 acres, 20' deep

Information on water resources was obtained from "State of Michigan Environmental Assessment – Waterloo RA"

GEOLOGY AND TOPOGRAPHY

Waterloo Recreation Area exhibits the complex and irregular topography characteristic of the Interlobate Region, with portions of steep sloped end moraine and road outwash channels overlain with pitted ice contact topography, as demonstrated by the numerous kames, eskers, lakes and ponds scattered throughout the Recreation Area. High points of the park include Sugarloaf Hill (1108 feet), Pondlilly Lookout (1050 feet), and Sackrider Hill (1050 feet). The major moraine deposits extend along a line from Green Lake to Sackrider Hill. Land to the south of this line is composed of flood plains and some low hills. To the north lie extensive swamps. Dispersed throughout the swamp region are islands of high ground covered with oak and hickory.

*information on geology and topography was obtained from "State of Michigan Environmental Assessment – Waterloo RA"

SOILS

Within Waterloo RA there are several soil types. Usually each soil boundary encloses an association of soils rather than one definite soil. The association is made up of one dominant soil.

Bellefontaine: This soil type has a loamy surface layer over sandy clay loam or clay loam. Runoff is slow in the flat areas and rapid in the more sloping areas.

Coloma: Well drained soils with a sandy surface layer over alternate layers of sand and loamy sand or light sandy loam, over sand. Low dunes, lake plains, and moraines. Droughty and susceptible to erosion.

Hillsdale: The Hillsdale series consists of gentle sloping to steep, well drained soils on all plains and moraines. These soils are formed in sandy loam fill. Permeability is moderate. The available water capacity is moderate and fertility is medium. Surface runoff is slow to rapid.

Carlisle: The Carlisle series consists of black to very dark brown, well decomposed organic soils. The soils have form in mixed woody and fibrous materials under a swamp-timber type of vegetation. The organic soil materials are generally more than 42 inches thick. The Carlisle soils occur in old lakebeds and in drainage ways, but the most extensive areas are in closed depression in the uplands. A few areas occur in bottom lands, outwash plains, and in old glacial valleys.

Houghton: The Houghton series consists of organic soils that have formed from fibrous plant remains deposited in wet depressions. In the uppermost few inches, the sedges and grasses from which these soils formed are partly or completely decomposed. They are successively less decomposed at increasing depths. These soils occur mainly in marshy areas, some of which are bordered by lakes. They differ from Carlisle, which has formed mainly from woody plants rather than from fibrous materials. The thickness of organic deposits ranges from five to twenty feet. The degree of decomposition varies, in a few areas the surface is somewhat woody.

Rifle: The Rifle series consists of organic soils mainly formed from slightly decomposed woody plants including tamarack, red maple, elm, and white birch. The soils are similar to Carlisle and Houghton soils, but the surface layer on the surface layer of the Carlisle soils consist of much more decomposed muck and the Houghton soils have formed mainly from fibrous plant remains.

* Information on soil was obtained from "State of Michigan Environmental Assessment – Waterloo RA"

FLORA – PRESETTLEMENT

Originally, two types of oak forest covered the landscape of Waterloo Recreation Area, dry and dry-mesic. These oak forests are typical of, and primarily located, in southern Michigan. The dominant trees are white oak and black oak. Other trees common to these areas are hickory and red maple. Species including basswood and American ash were more common of the dry-mesic forest, while black cherry and sassafras were more common in the dryer forest. Ground flora in the dry-mesic forest was abundant with species of doll's eyes (Actaea alba), spotted coral root (Corallorhiza maculata), yellow violet (Viola pubascens), and sedges such as Carex albursina and Carex convolute.

Black oak barrens, also known as savannahs, developed one the edges between ice contact and outwash plain. Oak barrens were distinguished by scattered trees, usually black and white oak. Shrubs covered the rest of the terrain, characterized as dry sand prairie. Black oak barrens can now be found southwest of Portage Lake, as well as to the south and to the west of the Portage Lake Swamp Complex.

Kettle depressions, formed by receding glaciers, contained small lakes, ponds, marshes, shrub swamp, hardwood swamp, and mixed conifer swamp. Shrub swamps were inhabited by sedges that graded into dogwood, willow, and buttonbush. Conifer swamps were dominated by tamarack. Hardwood swamps contained elm, ash, and maple.

FLORA – CURRENT LANDCOVER

In the past, fire was an important natural process. Without the presence of fire, there has been no way to keep the growth of the forest in check. For this reason the barrens, marshes, and fens have made a gradual shift to a forested community. Light

demanding oak trees require an open canopy to develop, and will eventually be replaced by shade tolerant species such as sugar maple and red maple.

Human intervention has greatly affected the flora in Waterloo Recreation Area. Excluding steep ice contact slopes, land in the RA specifically, and in southern Michigan generally, has been cleared for farming or construction in the past. This process has been detrimental to indigenous species and allowed a foothold for invasive species in Waterloo RA.

Wetlands have fared the best. Wetlands and wetland communities still occur in several of their original locations. These include emergent marshes, southern wet meadow, prairie fen, conifer swamp, and deciduous swamp. Due to drainage ditches, dikes, dams, and succession caused by fire suppression, the abundance, distribution, and composition of these wetland communities has been altered. Wet prairie communities have transformed into southern shrub swamp, southern wet meadow, or hardwood swamps. Furthermore, this change has allowed non-native plants invade.

Even though all of the upland forests in Waterloo RA were once cut, mature dry southern forests have developed on ice contact hills, where it was impractical for agricultural use.

A dry southern forest occurrence extends west to southwest from Crooked Lake to Mt. Hope road. Dry southern forest intermixes with dry-mesic southern forest in a narrow band, less than half a mile wide. This band is continuous for over six miles. Mature portions are split up by younger second growth and wetland pockets.

Smaller patches of dry mesic southern forest extend throughout the Waterloo RA in less hilly areas bordering wetlands. Patches of dense black locust are often on the edges of both dry and dry-mesic southern forest.

The remaining level upland is old agricultural land that is now old field. Many of these fields are filling in with autumn olive, and are dominated by other non-native plants. These include spotted knapweed, white sweet clover, timothy grass, Kentucky bluegrass, and quack grass.

Many of the wetland pockets in kettle depressions have developed a ring around their outer edge of emergent aquatics or inundated shrub swamp and an interior of southern shrub swamp or tamarack swamp. However, some wetland pockets contain southern sedge meadow that is dominated by large-leaved sedges.

Wetlands around lakes and along streams are often a variety of relict conifer (tamarack) swamp, southern swamp, southern wet meadow, emergent marsh, prairie fen, and southern shrub swamp. Bog also exists around Little Cedar Lake and west of Welch Lake. Portage Lake, aside from several drainage ditches, is an intact wetland system.

<u>Special Concern, State Threatened, or State Endangered Species</u>

Spike-rush (Eleocharis caribaea)
Horsetail spike-rush (Eleocharis equisitoides)
Wild-rice (Zizania aquatica var. aquatica)
Prairie dropseed (Sporobolus heterolepi)
Sedge (Carex seorsa)
Clinton's bulrush (Scirpus clintoni)
Tall nut-rush (Scleria triglomerata)

*list taken from Inventory and Management Recommendations for Pinckney and Waterloo State Recreation Areas' Natural Communities, Rare Plants, and Rare Wildlife

FAUNA

Common Fauna:

Animal populations in Waterloo RA are typical of the region. Common animals include: deer, rabbit, fox, raccoon, opossum, squirrels, and coyotes. Avian species include swans, snow and blue geese, Canada geese, mallards, black ducks, blue wing teal, wood ducks, bitterns, great blue herons, black terns, coot, egrets, pheasant, quail, ravens, crows, red winged blackbirds, and a number of songbird species. One bird of note is the sandhill crane, which attracts bird watchers from all across the nation to Waterloo RA. As many as 2,000 sandhill cranes have been spotted in a field at one time at Waterloo. Unfortunately, many domestic animals, such as dogs and cats, have been abandoned in the park and are now part of the habitat.

Special Concern, State Threatened, State Endangered, and Federally Endangered:
American bittern (Botaurus lentigonosus)
Black rat snake (Elaphe obsolete)
Blanchard's cricket frog (Acris crepitans blanchardii)
Blanding's turtle (Emydoidea blandingii)
Cerulean warbler (Dendroica cerulean)
Common moorhen (Gallinula chloropus)
Dickcissel Spiza (Americana)
Eastern box turtle (Terrepene Carolina)
Eastern massasauga (Sistrurus catenatus)
Great-blue heron rookery
Henslow's sparrow (Ammodramus henslowii)
Hooded warbler (Wilsonia citrine)
Indiana bat (Myotis sodalist)
King rail (Rallus elagans)
Least bittern (Ixobrychus exilis)
Spotted turtle (Clemmy guttata)
Tamarack tree cricket (Oecanthus laricis)
*list taken from Inventory and Management Recommendations for Pinckney and Waterloo State Recreation Areas' Natural Communities, Rare Plants, and Rare Wildlife

Historic/Cultural Resources

PHYSICAL ENVIRONMENT

The physical environment was shaped by two major human forces in the past. The first force to change the landscape of the Waterloo RA region was Native Americans, who used fires to clear large sections of land. Later, farmers would use these same techniques to clear land for their crops, but also had the use of better technology such as saws, animals, and eventually machinery to clear vegetation and plow the soil. Areas with the oldest tree growth are those too steep to be used for farming or structure building, and consequently were never cleared.

CULTURAL ENVIRONMENT

For in depth information on the history surrounding the area of Waterloo Recreation Area, please refer to the "General History of Waterloo RA" on page XX.

ARCHAEOLOGICAL RESOURCES

Remnants of the past are abundant in Waterloo RA. The locations of 22 archeological sites are known, and many more lay undiscovered. In an effort to preserve the integrity of these sites many of the locations are kept confidential. Preserving archeological sites is the reason for the limited amount of metal detecting areas within Waterloo RA. Historical artifacts can be found all over the park. For example, in 1989 a scatter of exposed materials were recovered in a high traffic area of the park due to erosion from foot traffic. It is important that people are not able to remove these types of important artifacts from Waterloo RA.

Because of the vast amount of private in-holdings inside Waterloo RA, some historical sites may actually be on private property, but are still considered part of Waterloo RA's historic resources. Fruit trees are often used as an indicator that there may have been a farmstead located on a particular piece of land.

Scattered throughout the park are many small family cemeteries. Some of these cemeteries have been moved, while others remain in their original locations. As well as cemeteries, traces of Indian burial mounds have been noted in various surveys conducted in the park.

One cemetery of note is known as Hatt, Glover, Richards, or Harvey Cemetery. It is not maintained, but is in relatively good condition. Five original limestone grave markers remain, only one retains most of its information including a date of death, 1904. Four original trees have survived as well. A wire fence still surrounds the cemetery site. Given the size of the cemetery, it would seem that many graves were unmarked or have lost their headstones.

BUILDINGS AND STRUCTURES

Mill Lake, originally designed as a work camp, was later revised and constructed as a youth camp. Work started on February 7, 1936 and was hurried to temporary completion by July 1, in order to house the first group of campers. During July 1936, 200 children between the ages of 8 and 14 occupied Mill Lake.

The first group of campers at Mill Lake. July, 1936.

Mill Lake was outfitted with a dining hall equipped to serve 160 people, and a first aid building. These structures were the only two wired for electricity. Other structures included an administrative office, Museum/Crafts shop, Laundry, latrine, a warehouse, a three car garage, personnel quarters, a boathouse, a pump house, eight ten-cot cabins for campers, and two troop houses (for meetings and camp training).

Cedar Lake Group Camp was completed in 1940, and consisted of a central core of community buildings and three separate camp groups. The central group included a dining hall, help quarters, wash house/laundry/latrine building, craft shop, maintenance building, staff quarters, infirmary, and administration building. The three camp groups consist of a number of cabins with room for four to eight campers and a two-person cabin to house the counselors. These buildings have had needed maintenance performed on them but retain much of their historical integrity. The exteriors of these buildings were made of rough sawed wood or board and batten. Their roofs were shingled with wood shingles and their foundations were either concrete or stone.

Construction on Cassidy Lake as a year round vocational school for boys was started in September, 1936. One interesting building in the complex was a remodeled barn used as a dormitory. The barn was intended only for temporary use as the construction of Cassidy Lake was rushed in order to open in time for the summer of 1937. The basement of this barn served as a workshop, tool room and warehouse. A farmhouse was used as a combined dinning hall, recreation room, and administrative offices while the dining hall and administrative building were under construction. There were 16 cabins, which were occupied by eight boys and one counselor. A dinning hall was erected to serve 160 people, as well as a craft shop, staff quarters, first aid building, and a help quarters (caretaker, cook quarters). The NPS also beautified Cassidy lake by constructing a dike and two levees in order to raise the water level by two feet.

Camp Waterloo is currently leased by the Department of Corrections as a low security prison. It is not in use and is currently in a state of decay. In the 1930's a CCC camp was built on the site. During World War II it was a military police training facility and then a German POW camp.

As previously noted, the area where Waterloo RA now stands was once inhibited mainly by farmsteads. As a result many traces from these historic days are still intact. A survey conducted by Misty Jackson on September 8, 1995 cited these locations as historic archaeological resources.

Sylvan Estates Country Club is the present site of the recreation area's headquarters. In fact, the original club house building is still in use. Some other elements of the club are still intact, as well. There was a pavilion nearby, now only a crumbling foundation, which offered a view of the "seven lakes", located in Pinckney RA. The trees have grown in so much that the view is now obstructed. Also, an original pump house remains but is currently in a state of decay.

The locations of twelve farmsteads are known. Farmstead 1, known as Bunn Farm, included a house and three or four outbuildings. The buildings on Farmstead 2 are known to be built of hand hewn lumber. One garage is still standing. Other buildings that once stood on Farmstead 2 were a barn, well house, corn crib, storage shed, and a house. Farmstead 3 is known to have been built at least 60 years ago. One of the two remaining buildings on Farmstead 4 was removed some years ago. An apple tree was found near this site, and it is evident that some fields were man-made around the farmstead. It is possible that this site is actually made up of two adjacent farmsteads. The only remnants of Farmstead 5 are the foundation of an old barn and a clearing that is now being re-vegetated. Little is known about Farmstead 6 and Farmstead 7. Farmstead 8 includes a stone foundation and a cistern. Farmstead 9 was homesteaded by original settlers to the area. Recently torn down, Farmstead 10 was a centennial farm. Farmstead 11 still contains large foundation stones and a cistern. Walnut trees and former fields of the farmstead are still apparent. It is unknown if any original foundations are preserved from Farmstead 12, although a peach and walnut tree are still in existence.

Four historic dam locations have also been recorded. Locations are on Sylvan, Portage, Mud, and Sugarloaf Lakes. An airport, built circa 1940, is currently a hay field. A foundation is still present.

Three church camps were located in the area. The first was built circa 1950; the second was a Jewish called "Camp Ma-Hi-Ya." Foundations of both camps still remain in tact. The third camp was known as the "Michigan Baptist Assembly Camp."

HISTORIC LANDSCAPE

Sackrider Hill is the second highest point in Waterloo RA (1050 feet). Atop the hill stands a cross. It has been the subject of some controversy because having a religious symbol on State owned lands is prohibited, but since the cross has become a historic land marker it has remained on top of the hill. The present cross was built around 1950, but supposedly there was an older cross before that.

Local tradition claims there was a fort on Pond Lily Hill where soldiers were massacred by Indians. This is the second highest point in the park (1050 feet).

Education and Interpretation

Situated with a view of Mill Lake, the Gerald E. Eddy Discovery Center provides educational and interpretive services for all. Here visitors can learn about the geology and habitats that are located within the park. There is a large interactive map in the Center's main room that illustrates the trails and campgrounds situated throughout the recreation area. Facing the lake is a bird observatory with outdoor speakers that enables visitors to hear the birds from inside the center. There are also exhibits that represent habitats found in the park including hardwood swamp, bog, beech-maple forest, and fen. The main room also has a large display of arrowheads that were donated to the Discovery Center. The Geology room is intended for children, with features that include a "Fossil Graveyard", "Ice Cave", "Weather Report", and a "Mad Scientist Lab." Additionally, the Eddy center utilizes an auditorium for educational films and a classroom for hands on work.

Recreational Resources

Waterloo Recreation Area offers a diverse array of recreational opportunities with both day-use activities and camping. Following are the recreational features of this park:

Gerald E. Eddy Visitor Center
Exhibits include interactive displays, multi-image slide shows, and other nature programs to orient visitors to Michigan's unique cultural and natural features.

Hunting
Waterloo Recreation Area is open to hunting for all species following regular State Regulations between September 15 and March 31. This park boasts excellent deer and turkey hunting, with prevalent numbers of both species. Rabbit and squirrel can be found to a lesser degree throughout the park. In addition, there are areas throughout the park with populations of pheasant, quail, grouse and woodcock. Hiking and equestrian trails are within the open hunting areas. The area surrounding Mill and Cedar Lake, the area surround Portage Lake Campground, and private properties are all closed to hunting. The park is also open to trapping.

Wildlife Viewing Area
The Haehnle Audubon Sanctuary occupies nearly 1000 acres of former farmland. The main attraction here is the fall migration of sandhill cranes. Up to 3,000 of these birds have been sighted at one time.

Playgrounds
Play areas offer a variety of playground equipment for children. Playgrounds are available at the Portage Lake day-use area and the Sugarloaf Campground. Both are Handicap accessible.

Portage Lake Beach House
The Beach House provides a changing area for swimmers. The beach house is available at the Portage Lake beach area. This facility is ADA accessible.

Swimming Beaches
There is a public beach at Big Portage Lake and a “campers only” swimming beach at Sugarloaf Campground.

Fishing
Fishing piers can be found at Big Portage Lake and Crooked Lake. Only Big Portage Lake has an ADA accessible fishing pier. Any of the publicly accessible lakes in Waterloo RA may be fished. Bass, panfish, bluegill, pike and other fish typical of the region inhabit the lakes of Waterloo RA.

Big Portage Lake Picnic Area
A picnic site is located at Big Portage Lake and has picnic tables, grills, potable water, toilet facilities, and two picnic shelters which can be reserved ahead of time. Hours for operation are 8:00 a.m. to 10:00 p.m. The Big Portage Lake picnic area is ADA accessible.

Crooked Lake and Mud Lake Picnic Areas

Smaller picnic sites are located at Crooked Lake and Mud Lake. Sites at both locations come equipped with picnic tables and grills.

Hiking

Waterloo contains a labyrinth of hiking trails, including the Waterloo-Pinckney Trail. Many of the trails originate at the Eddy Center, range from less than one mile to over five miles.

Equestrian Trails

Three different trail options depending on the desired length of your trip. Total trail length is 15 miles.

Mountain Biking

With access on Katz and Glenn Roads, the five mile biking trail provides a scenic and challenging trail for riders of all skill levels.

Boat Launch Sites

Public boat launch sites are located at Big Portage Lake, Cedar Lake, Green Lake, Crooked Lake, Mill Lake, Mud Lake, the Winnewana Impoundment, and Walsh

Lake. There is a boat launch at Sugarloaf Campground that is limited to camper use only.

These lakes can be accessed by foot across State land: Clear Lake, Doyle Lake, Cassidy Lake, Little Portage Lake, and Merkle Lake.

Big Portage Lake Concession/Store

During the summer a concession store is open at Big Portage Lake Beach. Items for sale include firewood, groceries, and souvenirs.

Cross Country Ski

All cross county ski trails originate at the Eddy Center. These trails are un-groomed.

Metal Detecting

Any items found must be checked by the park staff and may be held for further investigation. Areas open to metal detecting are very restricted.

Park Use Statistics and Economic Impacts

Economic Impacts: Michigan State University (Dr. Dan Stynes) developed an economic analysis model known as "MGM2". This model is an update of the MGM model developed by Dr. Ken Hornback for the National Park System in 1995. The purpose of the updated MGM2 model is to estimate the impact of park visitor spending on the local economy. These economic impacts are reflected in terms of sales, income, employment, and value added.

This analysis tool relies on three primary factors in the common equation:

> Economic Impact of Tourism Spending = Number of Tourists (x) Average Spending per Visitor (x) Multiplier (to estimate extended effects of direct spending).

For our purposes of conducting a very basic review of impacts, we have utilized the "MGM2-Short Form" version of the program, which simplifies the extent of analysis required for input, and utilizes more generalized multipliers for spending outputs. For the non economist, this provides an excellent tool for establishing a baseline assessment of the economic impacts of our parks.

Following are the relative economic impacts (based on 2005 data) of Waterloo RA to the economy of Jackson/Washtenaw County: ("MGM2-Short Form" for Algonac)

DIRECT ECONOMIC EFFECTS TO THE COMMUNITY

- Direct spending attributable to Waterloo RA visitors totaled $18,552,000, of which $1,062,000 came from Day-Use, and $17,490,280 from Camping.

- Jobs totaled 583, with 33 related to Day-Use activity and 550 to Camping. (Note…jobs are not full-time equivalent. They include part-time and seasonal positions.)

- Personal Income total is $6,309,000, with $361,230 associated with Day-Use of the park and $5,948,170 associated with Camping.

- Value added (total income plus business taxes) totaled $9,526,000. Day-Use accounted for $545,350 and Camping accounted for $8,980,170.

TOTAL ECONOMIC EFFECTS TO THE COMMUNITY (NOTE…this reflects 'Direct Effects' plus the 'Secondary Effects' of visitor spending on the local economy. Secondary Effects (sometimes called 'Multiplier Effects') capture economic activity that results from the re-circulation of money spent by the park visitors in the community.

- Total spending = $24,527,000 (32.2% over direct spending)

- Jobs = 682 (16.78% over direct job impacts)

- Personal Income = $8,299,000 (31.54% over direct spending)

- Value added = $13,207,000 (38.64% over direct value added)

  NOTE….for purposes of updating economic values, the Consumer Price Index (CPI) is often used to adjust values over time. Through the following link, [**http://www.bls.gov/home.htm**] a CPI Inflation Calculator is located in the category of "Inflation and Consumer Spending".